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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/655,511 | 09/05/2000 | Mitsuhiro Nomi | F-6636 | 7918 |

7590
Jordan and Hamburg
122 East 42nd Street
New York, NY 10168

09/14/2004

EXAMINER

JONES, SCOTT E

ART UNIT PAPER NUMBER

3713

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/655,511

Applicant(s)

NOMI ET AL. 

Examiner

Scott E. Jones

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 2-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on June 1, 2004 in which applicant amends the specification, amends claims 15, 16, 20, and 21, adds new claims 22-30, and responds to the claim rejections. Claims 2-30 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 15, and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenbrey et al. (U.S. 5,516,105) in view of Powell (U.S. 6,030,290).

Eisenbrey et al. discloses an acceleration activated switching mechanism (game controller) held in a player's hand to provide inputs for a video game with the action in the game being based upon, for instance, a player's swinging or punching motions. Eisenbrey et al. additionally discloses:

Regarding Claims 2, 15, and 21:

- a signal generating device (20) retainable by a game player in a manner permitting transfer of at least one of a hitting motion and a swinging motion imparted thereto by said game player, the signal generating device including a signal generator including a second sensor for sensing an acceleration of the signal generating device; said second sensor generating a second signal in response to said swinging motion when

said acceleration is sensed while said signal generating device is retained by the game player; said second signal being indicative of a change in velocity of said signal generating device being moved by said game player, an entirety of said second sensor of said signal generator being movable by the game player from a first location to a second location by movement of said signal generating device retained by the game player, said change in velocity being measured as a difference between a first velocity (initial velocity) of said second sensor when at said first location and a second velocity (final velocity) of said second sensor when at said second location (Abstract, Figure 1, Column 1, lines 8-15, Column 2, lines 5-40, Column 2, line 66-Column 3, line 3, Column 3, lines 33-54, Column 4, lines 38-47, Column 5, lines 1-3, 20-31, and 41-49, and Claim 1). Although the term “velocity” is not used in Eisenbrey et al., by definition, acceleration is simply the rate of change of the velocity. That is, $A = \frac{V_f - V_i}{T_f - T_i}$;

- a display (12) having a display screen for displaying and successively renewing an instruction of motion on the display screen (Figure 1);
- evaluating means for evaluating a game result based on a generation timing of the signal (Abstract, Figure 1, Column 1, lines 8-15, Column 2, lines 5-40, Column 2, line 66-Column 3, line 3, Column 3, lines 33-54, Column 4, lines 38-47, Column 5, lines 1-3, 20-31, and 41-49, and Claim 1). One of the objects of Eisenbrey et al. is to realistically associate the movements of a game player with the actions being played out in a video game, therefore, the timing a player makes an input (signal) is critical to the evaluating of a game result. For instance, in a boxing game, if a player throws

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a punch after the player's opponent ducks, then the punch will not land, however, if the player throws a punch before the player's opponent ducks, then the punch will land and have some result, such as a knockdown; and

- a sound generator for outputting at least a background sound (Column 3, line 11).

Although Eisenbrey et al. discloses the acceleration activated switch permits detection of up/down (hammering) and in/out (punching) arm movements, Eisenbrey et al. seems to lack explicitly disclosing:

Regarding Claims 2, 15, and 21:

- first sensor for sensing an impact of the signal generating device;
- said first sensor generating a first signal in response to said hitting motion when said impact is sensed while said signal generating device is retained by the game player;
- said first signal being indicative of a change in state of said signal generating device being moved by said game player from a third location to a fourth location by movement of said signal generating device retained by the game player, said change in the state being measured as a difference other than the change in velocity of the first sensor when at said third location and said state when at said fourth location.

Powell teaches of a momentary contact motion switch that can be strapped to the wrist or ankle of a player in order to provide inputs to a video game when a player punches or kicks in a martial arts type game. Eisenbrey et al. and Powell both relate to providing inputs to video games via instruments retainable by a game player and is thus analogous art. Powell teaches:

Regarding Claims 2, 15, and 21:

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- first sensor for sensing an impact of the signal generating device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column 3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3);
- said first sensor generating a first signal in response to said hitting motion when said impact is sensed while said signal generating device is retained by the game player device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column 3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3);
- said first signal being indicative of a change in state of said signal generating device being moved by said game player from a third location to a fourth location by movement of said signal generating device retained by the game player, said change in the state being measured as a difference other than the change in velocity of the first sensor when at said third location and said state when at said fourth location device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column 3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3).

It would have been obvious to one having ordinary skill in the art, at the time of the applicant's invention, to incorporate Powell's momentary contact motion switch in Eisenbrey's game controller. One would be motivated to do so such that a player would know when a punch has landed on an opponent making the game even more realistic.

Additionally, Eisenbrey et al. lacks explicitly disclosing:

Regarding Claim 22:

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- said first sensor is an impact sensor and said second sensor is an acceleration sensor.

Regarding Claim 23:

- wherein said impact sensor includes piezoelectric material such that said piezoelectric material elongates or contracts in response to the impact motion by the game player in a direction from the third location to the fourth location.

Regarding Claim 24:

- wherein said signal generating device includes a bottom surface on which said first sensor and the second sensor are provided and said impact sensor detects the impact motion in a direction orthogonal to the bottom surface.

Regarding Claim 25:

- wherein said acceleration sensor detects the change in velocity in a direction parallel to the bottom surface.

Regarding Claim 26:

- wherein the motion detecting direction of said acceleration sensor is substantially orthogonal to the motion detection direction of said impact sensor.

Regarding Claim 27:

- wherein the motion by the player is judged by the ON/OFF states of the acceleration sensor and the impact sensor.

Regarding Claim 28:

- wherein the motion by the player is judged to be the swinging motion when only the acceleration sensor is ON and the motion by the player is judged to be the hitting

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motion when the impact sensor is ON state regardless of the ON/OFF state of the acceleration sensor.

Regarding Claim 29:

- wherein said impact sensor is mounted on a layer provided over the bottom surface and said acceleration sensor is mounted over the impact sensor with a clearance therefrom such that the acceleration sensor is supported on said layer via a plurality of supporting members.

Regarding Claim 30:

- wherein said supporting member include a tubular member on which the acceleration sensor is placed and a screw member which is engaged with the top surface of the acceleration sensor and is inserted through the tubular member and tightened to the layer so that the acceleration sensor is fixed over said impact sensor onto the layer.

However, regarding claims 22-30, it would have been obvious to one having ordinary skill in the art at the time of Applicant's invention to design an input device for a game controller as instantly claimed. Doing so is well within standard engineering design guidelines.

4. Claims 3-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagawa et al. (E.P. 0,903,169) in view of Eisenbrey et al. (U.S. 5,516,105) and Powell (U.S. 6,030,290).

Sagawa et al. discloses two operating sections with an operation input device comprising a keyboard input unit (13) and a turntable input unit (14) for playing a music action game and an effect producing device for producing a performance effect in response to a performance operation performed by the player(s) to each of the operation members. Sagawa et al. discloses a

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storage device for storing data of a musical composition and data of a performance procedure associated with the musical composition; a music play device for playing the musical composition based on the data stored in the storage device; and an operation instructing device for giving the player a visual instruction to operate the operation members in accordance with progress of a play of the musical composition based on the data stored in the storage device.

Sagawa et al. discloses an estimation device may estimate the performance operation based on a difference between timing of the performance procedure and timing at which the player actually performed the performance operation. Sagawa et al. discloses a sound effect producing device for producing the sound effects based on the operation input signals issued from the operation input device and the data of the sound effects stored in the storage device; and an estimation device for estimating operation of the player based on the operation input signals issued from the operation input device and the data of the performance procedure stored in the storage device.

Sagawa et al. discloses producing at least one of the sound effects based on the operation input signals issued from the operation members and the data of the sound effects; estimating operations performed by the player based on the operation input signals issued from the operation members and the data defining the procedure. Sagawa et al. discloses an effect producing device may produce a reaction effect as one type of the performance effect each time the estimation device determines the estimation result, and the reaction effect may be changed in accordance with the estimation result. Sagawa et al. discloses a data storage device may store a plurality of data sets, each of which includes the data of the musical composition and the data of the performance procedure; and said game machine may further comprise a stage progress management device for controlling progress of a game in such a manner that when the estimation

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device gives a predetermined level of estimation with respect to the performance operation in one stage in which the musical playing device plays the musical composition based on one of the data sets; the game is allowed to progress to a next stage in which the music play device plays the musical composition and the instructing device instructs the performance operation based on another one of the data sets. Sagawa et al. discloses an indication of the indicator may change in such a manner that the length of each index mark represents a time period during which the player must hit a key repeatedly. Sagawa et al. discloses a storage device for storing data of a musical composition and data of a performance procedure associated with the musical composition. This storage device may include a storage device such as a hard disk drive or a (replaceable) floppy disk, an optical or a magneto-optical storage device such as a (replaceable) CD-ROM, a semiconductor storage device such as a RAM or a ROM, or the various types of storage devices. Sagawa et al. discloses a performance procedure presenting device for presenting the player with the performance procedure in a visual manner in association with a play of the musical composition based on the data of the performance procedure stored in the storage device. Sagawa et al. discloses a sound effect producing device for producing the sound effects based on the operation input signals issued from the operation input device and the data of the sound effects stored in the storage device. Sagawa et al. discloses a storage device for storing data of a musical composition, data of a performance procedure with respect to each of the operation members of the operation input device, and data of sound effects corresponding to each of the operation members. Sagawa et al. discloses a player operates at least one of the operation members in association with the music, the performance effect corresponding to the operation is mixed on the music. Since the data of the performance procedure is stored in

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advance and correct timing to operate each operation member is indicated to the player through the operation instructing device in a visual manner, the player only has to operate the operation members in accordance with the instruction given from the game machine. Sagawa et al. discloses two image display areas for displaying instructions to player(s) while moving the instructions with respect to a reference mark provided on the left and right sides of the screen and includes two signal generators provide on the left and right side of the game system. Sagawa et al. additionally discloses:

Regarding Claim 3:

- the sound generator outputs the sounds based on the generation timing of the signal (Column 7, lines 16-24).

Regarding Claim 4:

- the instruction of motion displayed on the display screen is in a form of at least one instruction mark (Column 1, lines 26-36, Column 2, lines 22-32, and Figures 7 and 10).

Regarding Claim 5:

- the display includes an image data storage means for storing a display timing data of each instruction mark, and an image control means for reading a corresponding instruction mark to be displayed from the image data storage means and scroll displaying the read instruction mark on the display screen with respect to a reference mark (Column 1, lines 26-36, Column 2, lines 22-32, and Figures 7 and 10).

Regarding Claim 6:

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- the sound generator includes a sound data storage means for storing a multitude of kinds of sound data, a sound control means for reading a corresponding sound data from the sound data storage means based on the signal from the signal generator which is inputted thereto, and a sound output means for outputting a sound based on the sound data read by the sound control means (Column 3, lines 29-42).

Regarding Claim 7:

- the sound control means reads the corresponding sound data from the sound data storage means when the signal is inputted from the signal generator within a predetermined time period (Column 16, line 52-Column 17, line 1).

Regarding Claim 8:

- a replaceable storage member readably storing a display timing data of each instruction mark stored in the image data storage means, a control program of the image control means, a multitude of kinds of sound data to be stored in the sound data storage means and a control program of the sound control means, wherein the data and the programs stored in the storage member are to be stored in the image data storage means and the sound data storage means (Column 1, lines 26-28, Column 9, lines 37-42, and Column 7, lines 10-19).

Regarding Claims 9, 16, and 20:

- the storage member also stores the background sounds, and the background sounds stored in the storage member are outputted from the sound output means (Column 7, lines 2-9, Figures 6 (52)(8a-c).

Regarding Claims 10, 16, and 20:

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- the evaluating means evaluates a game result based on a ratio of the number of signals inputted during a predetermined time period from the signal generator to a total number of the at least one instruction mark (Column 1, lines 41-45 and Column 4, lines 7-11).

Regarding Claims 11 and 20:

- the display displays a first and second instruction mark on the display screen as the instruction of motion (Column 1, lines 50-Column 2, line 3 and Figures 3 and 4).

Regarding Claim 12:

- the sound control means reads the corresponding sound data from the sound data storage means based on a combination of On-Off states of the first and second signals from the signal generator (Column 3, lines 29-42).

Regarding Claims 13, 16, 17, 18, 19, and 20:

- two image display areas for displaying the first and second instruction marks while moving them with respect to the reference mark are provided on the right and left sides of the display screen with respect to the game player, and two signal generators are provided on the right and left sides of the game system with respect to the game player (Figure 1 (5)(14)(15a-e) and 9 (65a and b)).

Regarding Claim 14:

- the two image display areas are provided for a plurality of game players, and the two signal generators are provided for a plurality of game players (Figure 1 (5)(14)(15a-e) and 9 (65a and b)).

Although Sagawa et al. discloses a keyboard input unit (13) and a turntable input unit (14) for playing a music action game, Sagawa et al. seems to lack explicitly disclosing:

Regarding Claims 11, 16, and 20:

- a signal generating device retainable by a game player in a manner permitting transfer of at least one of a hitting motion and a swinging motion imparted thereto by said game player, the signal generating device including a signal generator including a second sensor for sensing an acceleration of the signal generating device; said second sensor generating a second signal in response to said swinging motion when said acceleration is sensed while said signal generating device is retained by the game player; said second signal being indicative of a change in velocity of said signal generating device being moved by said game player, an entirety of said second sensor of said signal generator being movable by the game player from a first location to a second location by movement of said signal generating device retained by the game player, said change in velocity being measured as a difference between a first velocity (initial velocity) of said second sensor when at said first location and a second velocity (final velocity) of said second sensor when at said second location;
- a display having a display screen for displaying and successively renewing an instruction of motion on the display screen;
- evaluating means for evaluating a game result based on a generation timing of the signal; and
- a sound generator for outputting at least a background sound.

However, Eisenbrey et al. teaches of an acceleration activated switching mechanism (game controller) held in a player's hand to provide inputs for a video game with the action being played in the game being based upon, for instance, a player's swinging or punching motions. Eisenbrey et al. and Sagawa et al. are analogous art because each relate to obtaining player inputs via hand motions to generate an outcome in a video game. Furthermore, Eisenbrey et al. teaches:

Regarding Claims 11, 16, and 20:

- a signal generating device (20) retainable by a game player in a manner permitting transfer of at least one of a hitting motion and a swinging motion imparted thereto by said game player, the signal generating device including a signal generator including a second sensor for sensing an acceleration of the signal generating device; said second sensor generating a second signal in response to said swinging motion when said acceleration is sensed while said signal generating device is retained by the game player; said second signal being indicative of a change in velocity of said signal generating device being moved by said game player, an entirety of said second sensor of said signal generator being movable by the game player from a first location to a second location by movement of said signal generating device retained by the game player, said change in velocity being measured as a difference between a first velocity (initial velocity) of said second sensor when at said first location and a second velocity (final velocity) of said second sensor when at said second location (Abstract, Figure 1, Column 1, lines 8-15, Column 2, lines 5-40, Column 2, line 66-Column 3, line 3, Column 3, lines 33-54, Column 4, lines 38-47, Column 5, lines 1-3, 20-31, and

41-49, and Claim 1). Although the term “velocity” is not used in Eisenbrey et al., by definition, acceleration is simply the rate of change of the velocity. That is, $A = (V_f - V_i) / (T_f - T_i)$;

- a display (12) having a display screen for displaying and successively renewing an instruction of motion on the display screen (Figure 1);
- evaluating means for evaluating a game result based on a generation timing of the signal (Abstract, Figure 1, Column 1, lines 8-15, Column 2, lines 5-40, Column 2, line 66-Column 3, line 3, Column 3, lines 33-54, Column 4, lines 38-47, Column 5, lines 1-3, 20-31, and 41-49, and Claim 1). One of the objects of Eisenbrey et al. is to realistically associate the movements of a game player with the actions being played out in a video game, therefore, the timing a player makes an input (signal) is critical to the evaluating of a game result. For instance, in a boxing game, if a player throws a punch after the player's opponent ducks, then the punch will not land, however, if the player throws a punch before the player's opponent ducks, then the punch will land and have some result, such as a knockdown; and
- a sound generator for outputting at least a background sound (Column 3, line 11).

It would have been obvious to one having ordinary skill in the art, at the time of the applicant's invention, to replace the turntable scratch pad and musical keyboard input keys of Sagawa et al. with the acceleration activated switching mechanism (game controller) held in a player's hand to provide inputs for a boxing type video game of Eisenbrey et al. One would be motivated to do so to make it easier for a game player to respond rapidly and accurately to an action shown on the display device.

Additionally, Sagawa et al. in view of Eisenbrey et al. seems to lack explicitly teaching:

Regarding Claims 11, 16, and 20:

- first sensor for sensing an impact of the signal generating device;
- said first sensor generating a first signal in response to said hitting motion when said impact is sensed while said signal generating device is retained by the game player;
- said first signal being indicative of a change in state of said signal generating device being moved by said game player from a third location to a fourth location by movement of said signal generating device retained by the game player, said change in the state being measured as a difference other than the change in velocity of the first sensor when at said third location and said state when at said fourth location.

Powell teaches of a momentary contact motion switch that can be strapped to the wrist or ankle of a player in order to provide inputs to a video game when a player punches or kicks in a martial arts type game. Sagawa et al, Eisenbrey et al. and Powell each relate to providing inputs to video games via instruments retainable by a game player and is thus analogous art. Powell teaches:

Regarding Claims 2, 15, and 21:

- first sensor for sensing an impact of the signal generating device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column 3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3);
- said first sensor generating a first signal in response to said hitting motion when said impact is sensed while said signal generating device is retained by the game player device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column

3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3);

- said first signal being indicative of a change in state of said signal generating device being moved by said game player from a third location to a fourth location by movement of said signal generating device retained by the game player, said change in the state being measured as a difference other than the change in velocity of the first sensor when at said third location and said state when at said fourth location device (Abstract, Figures 1-4, Column 1, lines 6-10, Column 2, lines 45-67, Column 3, lines 31-55, Column 4, lines 1-8, Column 4, line 26-Column 5, line 10, and Claims 1-3).

It would have been obvious to one having ordinary skill in the art, at the time of the applicant's invention, to replace the turntable scratch pad and musical keyboard input keys of Sagawa et al. with the acceleration activated switching mechanism (game controller) held in a player's hand to provide inputs for a boxing type video game of Eisenbrey et al. and Powell. One would be motivated to do so to make it easier for a game player to respond rapidly and accurately to an action shown on the display device. Furthermore, by incorporating Powell's momentary contact motion switch in Eisenbrey's game controller a player would know when a punch has landed on an opponent making the game even more realistic.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

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harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 2-30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,669,563. Although the conflicting claims are not identical, they are not patentably distinct from each other because the first and second sensor generators of the instant invention are equivalent to the first and second signal generators claimed in the patent.

Response to Arguments

7. Applicant's arguments with respect to claims 2-21 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments, see pages 3,4, and 20, filed June 1, 2004, with respect to the objection to the figure 12 has been fully considered and is persuasive. The objection of the drawing has been withdrawn.

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9. Applicant's arguments, see pages 3, 4, and 20, filed June 1, 2004, with respect to the objections to the specification have been fully considered and are persuasive. The objections of the specification has been withdrawn.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

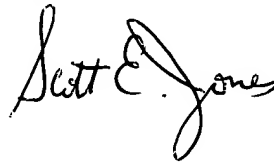
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott E. Jones whose telephone number is (703) 308-7133. The examiner can normally be reached on Monday - Thursday, 6:30 A.M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (703) 308-2064. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott E. Jones
Examiner
Art Unit 3713

A handwritten signature in black ink that reads "Scott E. Jones". The signature is written in a cursive style with a large, stylized "S" and "J".

sej